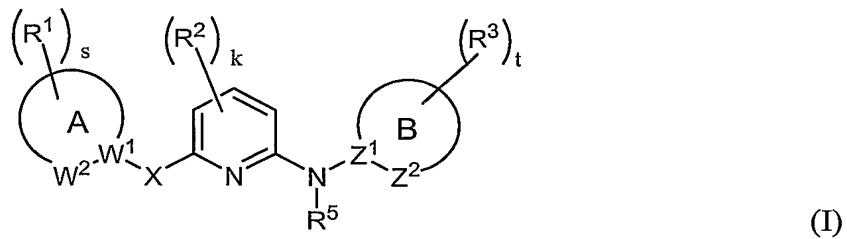


WHAT IS CLAIMED IS:

1 1. A compound according to Formula I:



27 L¹, L², L³, L⁴, L⁵, L⁶, and L⁷ are independently a bond, or substituted or
28 unsubstituted (C₁-C₆) alkylene;

29 R⁶ is H, substituted or unsubstituted alkyl, substituted or unsubstituted
30 heteroalkyl, substituted or unsubstituted 3- to 7- membered
31 cycloalkyl, substituted or unsubstituted 5- to 7- membered
32 heterocycloalkyl, substituted or unsubstituted aryl, or substituted or
33 unsubstituted heteroaryl; and

34 R⁷ and R⁸ are independently H, substituted or unsubstituted alkyl,
35 substituted or unsubstituted heteroalkyl, substituted or unsubstituted
36 3- to 7- membered cycloalkyl, substituted or unsubstituted 5- to 7-
37 membered heterocycloalkyl, substituted or unsubstituted aryl,
38 substituted or unsubstituted heteroaryl, -COR⁸¹, or -SO₂R⁸¹,
39 R⁸¹ is substituted or unsubstituted alkyl, substituted or unsubstituted
40 heteroalkyl, substituted or unsubstituted 3- to 7- membered
41 cycloalkyl, substituted or unsubstituted 5- to 7- membered
42 heterocycloalkyl, substituted or unsubstituted aryl, or substituted
43 or unsubstituted heteroaryl, wherein
44 R⁷ and R⁸ are optionally joined with the nitrogen to which they are
45 attached to form a substituted or unsubstituted 5- to 7-membered
46 heterocycloalkyl or substituted or unsubstituted heteroaryl;
47 wherein if s is greater than one, then each R¹ is optionally different;
48 wherein if k is greater than one, then each R² is optionally different;
49 wherein if t is greater than one, then each R³ is optionally different;
50 wherein two R¹ groups are optionally joined together with the atoms to
51 which they are attached to form a substituted or unsubstituted 5- to 7-
52 membered ring;
53 wherein two R² groups are optionally joined together with the atoms to
54 which they are attached to form a substituted or unsubstituted 5- to 7-
55 membered ring;
56 wherein two R³ groups are optionally joined together with the atoms to
57 which they are attached to form a substituted or unsubstituted 5- to 7-
58 membered ring;

59 wherein R¹ and R² are optionally joined together with the atoms to which
60 they are attached to form a substituted or unsubstituted 5- to 7-
61 membered ring;
62 wherein R² and R⁴ are optionally joined together with the atoms to which
63 they are attached to form a substituted or unsubstituted 5- to 7-
64 membered ring;
65 wherein R² and R⁵ are optionally joined together with the atoms to which
66 they are attached to form a substituted or unsubstituted 5- to 7-
67 membered ring;
68 wherein R² and R³ are optionally joined together with the atoms to which
69 they are attached to form a substituted or unsubstituted 5- to 7-
70 membered ring;
71 wherein R¹ and X are optionally joined together with the atoms to which
72 they are attached to form a substituted or unsubstituted 5- to 7-
73 membered ring;
74 wherein R² and X are optionally joined together with the atoms to which
75 they are attached to form a substituted or unsubstituted 5- to 7-
76 membered ring;
77 wherein R² and R⁵ are optionally joined together with the atoms to which
78 they are attached to form a substituted or unsubstituted 5- to 7-
79 membered ring; and
80 wherein R³ and R⁵ are optionally joined together with the atoms to which
81 they are attached to form a substituted or unsubstituted 5- to 7-
82 membered ring.

1 2. The compound of claim 1, wherein B is substituted or unsubstituted
2 pyridinyl, substituted or unsubstituted 1,2,4-thiadiazolyl, substituted or unsubstituted
3 pyrimidinyl, substituted or unsubstituted pyrazinyl, substituted or unsubstituted thiazolyl,
4 substituted or unsubstituted isoxazolyl, or substituted or unsubstituted pyrazolyl.

1 3. The compound of claim 1, wherein B is substituted or unsubstituted
2 pyridinyl.

1 4. The compound of claim 3, wherein Z¹ is $\begin{array}{c} \text{---} \\ \text{C} \\ \parallel \end{array}$ and Z² is -N=.

1 **5.** The compound of claim **1**, wherein R⁵ is H.

1 **6.** The compound of claim **1**, wherein X is a bond.

1 **7.** The compound of claim **6**, wherein A is substituted or unsubstituted
2 pyridinyl, substituted or unsubstituted pyrimidinyl, substituted or unsubstituted pyrazinyl,
3 substituted or unsubstituted pyridazinyl, substituted or unsubstituted thiazolyl, substituted or
4 unsubstituted isothiazolyl, substituted or unsubstituted benzimidazolyl, substituted or
5 unsubstituted imidazolyl, substituted or unsubstituted pyrazolyl, or substituted or
6 unsubstituted 1,2,4-oxadiazolyl.

1 **8.** The compound of claim **7**, wherein A is substituted or unsubstituted
2 pyridinyl, substituted or unsubstituted pyrazinyl, substituted or unsubstituted thiazolyl, or
3 substituted or unsubstituted pyrazolyl.

1 **9.** The compound of claim **8**, wherein A is unsubstituted pyridinyl,
2 unsubstituted pyrazinyl, unsubstituted thiazolyl, unsubstituted pyrazolyl, or unsubstituted
3 N-methyl pyrazolyl.

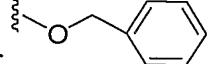
1 **10.** The compound of claim **1**, wherein R¹ is H, -OR⁶, -NR⁷R⁸, -NO₂,
2 halogen, substituted or unsubstituted (C₁-C₅) alkyl, substituted or unsubstituted 2- to 5-
3 membered heteroalkyl, substituted or unsubstituted 5- to 7- membered heterocycloalkyl,
4 substituted or unsubstituted aryl, or substituted or unsubstituted heteroaryl.

1 **11.** The compound of claim **10**, wherein R¹ is H, -NH₂, Br, F, Cl, -CF₃,
2 methyl, -OCH₃, -NH-C(O)-CH₃, -NH-C(O)-CH₂CH₃ or unsubstituted morpholino.

1 **12.** The compound of claim **1**, wherein k is 0.

1 **13.** The compound of claim **1**, wherein R² is -CF₃, Cl, F, -OH, -NH₂,
2 substituted or unsubstituted alkyl, or substituted or unsubstituted heteroalkyl.

1 **14.** The compound of claim **13**, wherein R² is substituted or unsubstituted
2 (C₁-C₆) alkyl.

1 **15.** The compound of claim **13**, wherein R² is -CF₃, -OCH₃, -
 2 OCH(CH₃)₂,
 3 -OCH₂CH₂OCH₃, -CH₂C(O)OCH₃, -OCH₂C(O)OCH₃, -C(O)N(CH₃)₂, -CN, -NHC(O)CH₃,
 4 or .

1 **16.** The compound of claim **1**, wherein R³ is H, -OH, -NH₂, NO₂,
 2 -SO₂NH₂, halogen, substituted or unsubstituted alkyl, substituted or unsubstituted
 3 heteroalkyl, substituted or unsubstituted 5- to 7- membered cycloalkyl, substituted or
 4 unsubstituted 5- to 7- membered heterocycloalkyl, substituted or unsubstituted aryl, or
 5 substituted or unsubstituted heteroaryl.

1 **17.** The compound of claim **16**, wherein R³ is substituted or unsubstituted
 2 pyrrolyl, substituted or unsubstituted thiazolyl, substituted or unsubstituted pyrrolidinyl,
 3 substituted or unsubstituted pyridinyl, substituted or unsubstituted thiophenyl, substituted or
 4 unsubstituted furanyl, substituted or unsubstituted isoquinoliny, or substituted or
 5 unsubstituted dihydroquinoliny.

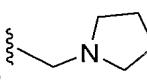
1 **18.** The compound of claim **16**, wherein R³ is substituted or unsubstituted
 2 morpholino, substituted or unsubstituted thiomorpholino, substituted or unsubstituted
 3 pyrrolidinyl, substituted or unsubstituted pyrrolidinyl, substituted or unsubstituted
 4 piperidinyl, substituted or unsubstituted piperazinyl, substituted or unsubstituted
 5 tetrahydrofuranyl, substituted or unsubstituted tetrahydropyran, substituted or
 6 unsubstituted tetrahydrothiophenyl, or substituted or unsubstituted tetrahydrothiopyran.

1 **19.** The compound of claim **1**, wherein R³ is -L¹-OR⁶, -L²-NR⁷R⁸,
 2 -L³-CONR⁷R⁸, -L⁴-COOR⁶, or -L⁵-COR⁶,
 3 wherein

4 R⁶ is H, substituted or unsubstituted (C₁-C₆) alkyl, substituted or
 5 unsubstituted 2- to 6- membered heteroalkyl, substituted or unsubstituted
 6 5- to 7- membered cycloalkyl, substituted or unsubstituted 5- to 7-
 7 membered heterocycloalkyl, substituted or unsubstituted heteroaryl, or
 8 substituted or unsubstituted aryl;

9 R⁷ and R⁸ are independently H, substituted or unsubstituted (C₁-C₆) alkyl,
 10 substituted or unsubstituted 2- to 6- membered heteroalkyl, or substituted
 11 or unsubstituted heteroaryl.

1 **20.** The compound of claim **19**, wherein
 2 R⁶ is H, unsubstituted (C₁-C₄) alkyl,
 3 -CH₂CH₂N(CH₃)₂, or unsubstituted benzyl;
 4 R⁷ and R⁸ are independently H, methyl, ethyl, -C(O)CH₃ or unsubstituted
 5 pyridinyl;
 6 wherein R⁷ and R⁸ are optionally joined with the nitrogen to which they
 7 are attached to form an unsubstituted pyrrolidinyl;
 8 L¹ is a bond, methylene, ethylene, or propylene;
 9 L² is a bond, methylene, or ethylene;
 10 L³ is a bond;
 11 L⁴ is a bond or ethylene;
 12 L⁵ is a bond.

1 **21.** The compound of claim **20**, wherein R³ is -OCH₃,
 2 -OCH₂CH₃, , -C(=O)N(CH₃)₂, -C(=O)OCH₃, -(CH₂)₂C(=O)OCH₂CH₃, -CH₂OH,
 3 -(CH₂)₂OH, -(CH₂)₃OH, or -N(CH₃)(CH₂CH₂OCH₃).

1 **22.** The compound of claim **1**, wherein R⁴ and R⁵ are independently H,
 2 substituted or unsubstituted alkyl, or substituted or unsubstituted heteroalkyl.

1 **23.** The compound of claim **22**, wherein R⁴ and R⁵ are independently H,
 2 substituted or unsubstituted (C₁-C₆) alkyl, substituted or unsubstituted 2- to 6- membered
 3 heteroalkyl, or substituted or unsubstituted 5- to 7- membered heteroaryl.

1 **24.** The compound of claim **23**, wherein R⁴ and R⁵ are independently H,
 2 methyl, -C(O)OC(CH₃)₃, -C(O)CH₃, or unsubstituted pyridinyl.

1 **25.** A metal complex, comprising a polyvalent metal ion and a
 2 polydentate component of a metal ion chelator, wherein said polydentate component is a
 3 compound according to claim **1**.

1 **26.** The complex of claim **25**, wherein said polyvalent metal ion is from
2 iron, zinc, copper, cobalt, manganese, or nickel.

1 **27.** A method of decreasing ion flow through potassium ion channels in a
2 cell, said method comprising contacting said cell with a potassium ion channel-modulating
3 amount of a compound of one of claims **1-22**, or **33-37**, or a complex of one of claims **24** or
4 **25**.

1 **28.** The method according to claim **27**, wherein said potassium ion
2 channel comprises at least one SK subunit.

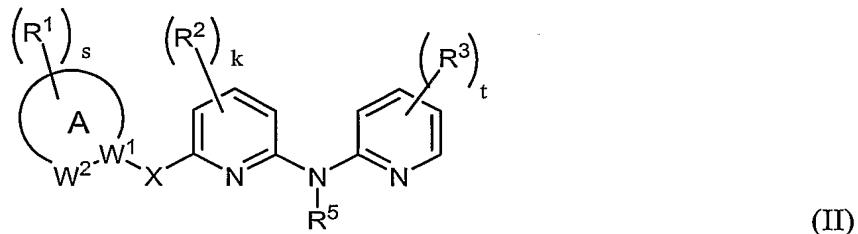
1 **29.** A method of treating a disease through modulation of a potassium ion
2 channel, said method comprising administering to a subject in need of such treatment, an
3 effective amount of a compound of one of claims **1-22**, or **33-37**, or a complex of one of
4 claims **24** or **25**.

1 **30.** The method according to claim **29**, wherein said disorder or condition
2 is selected from central or peripheral nervous system disorders, neuroprotective agents,
3 gastroesophageal reflux disorder, gastrointestinal hypomotility disorders, irritable bowel
4 syndrome, secretory diarrhea, asthma, cystic fibrosis, chronic obstructive pulmonary
5 disease, rhinorrhea, convulsions, vascular spasms, coronary artery spasms, renal disorders,
6 polycystic kidney disease, bladder spasms, urinary incontinence, bladder outflow
7 obstruction, ischemia, cerebral ischemia, ischemic heart disease, angina pectoris, coronary
8 heart disease, Reynaud's disease, intermittent claudication, Sjogren's syndrome,
9 arrhythmia, hypertension, myotonic muscle dystrophy, xerostomia, diabetes type II,
10 hyperinsulinemia, premature labor, baldness, cancer, and immune suppression.

1 **31.** The method according to claim **30**, wherein said central or peripheral
2 nervous system disorder comprises migraine, ataxia, Parkinson's disease, bipolar disorders,
3 trigeminal neuralgia, spasticity, mood disorders, brain tumors, psychotic disorders,
4 myokymia, seizures, epilepsy, hearing and vision loss, psychosis, anxiety, depression,
5 dementia, memory and attention deficits, Alzheimer's disease, age-related memory loss,
6 learning deficiencies, anxiety, traumatic brain injury, dysmenorrhea, narcolepsy and motor
7 neuron diseases.

1 **32.** A pharmaceutical composition comprising a pharmaceutically
 2 acceptable carrier and a compound of one of claims 1-22, or 33-37, or a complex of one of
 3 claims 24 or 25.

1 **33.** The compound of claim 1, having the formula:



2 wherein

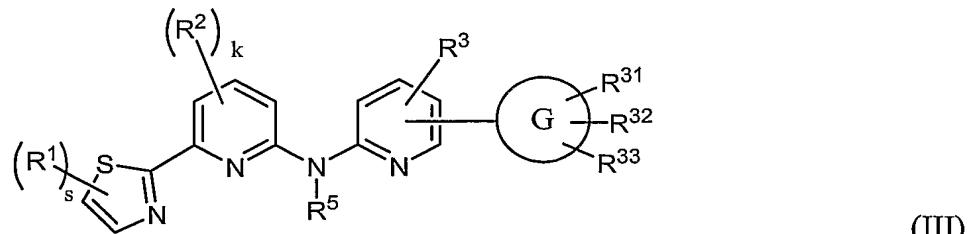
3 A is substituted or unsubstituted pyridinyl, substituted or unsubstituted
 4 pyrazinyl, substituted or unsubstituted thiazolyl, substituted or
 5 unsubstituted pyrimidinyl, substituted or unsubstituted imidazolyl,
 6 substituted or unsubstituted benzimidazolyl, or substituted or
 7 unsubstituted pyrazolyl,

8 R⁵ is H, substituted or unsubstituted alkyl, substituted or unsubstituted aryl,
 9 substituted or unsubstituted heteroaryl, -COR⁶, -COOR⁶, -CONR⁷R⁸,
 10 -SO₂R⁶, or -SO₂NR⁷R⁸; and

11 X is a bond.

12 **34.** The compound of claim 33, wherein A is substituted or unsubstituted
 1 thiazolyl.

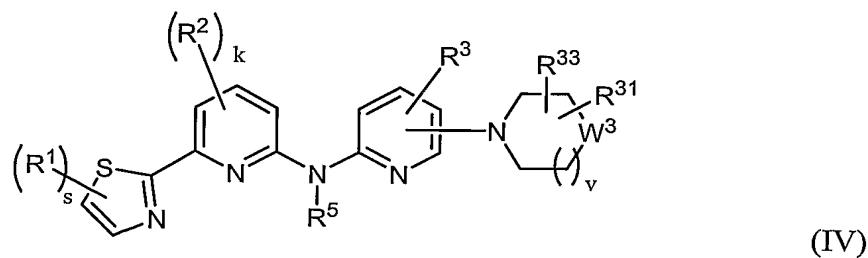
1 **35.** The compound of claim 1, having the formula:



2 wherein

3 G is substituted or unsubstituted cyclopropyl, substituted or unsubstituted
 4 cyclobutyl, substituted or unsubstituted cyclopentyl, substituted or
 5 cyclohexyl, or substituted or unsubstituted cyclohexenyl.

36. The compound of claim 1, having the formula:



3 wherein

4 W^3 is a bond, $-O-$, $-S-$, $-N(R^{32})-$, or $-C(R^{34}R^{35})-$;

5 v is an integer from 0 to 2;

6 R^3 is H, substituted or unsubstituted alkyl, $-OR^6$, or halogen;

7 R^5 is H, substituted or unsubstituted alkyl, substituted or unsubstituted aryl,
8 or substituted or unsubstituted heteroaryl;

9 R^{31} , R^{34} , and R^{35} are independently H, substituted or unsubstituted
10 alkyl, $-OR^{311}$, $-NR^{312}R^{313}$, $-COR^{311}$, $-COOR^{311}$, $-CONR^{312}R^{313}$, oxo, -
11 NO_2 , cyano, imino, or halogen;

12 R^{32} is H, alkyl, substituted or unsubstituted heteroalkyl, substituted or
13 unsubstituted 3- to 7- membered cycloalkyl, substituted or unsubstituted
14 5- to 7- membered heterocycloalkyl, substituted or unsubstituted aryl,
15 substituted or unsubstituted heteroaryl, $-OR^{311}$, $-COR^{311}$, $-COOR^{311}$,
16 $-CONR^{312}R^{313}$, $-SO_2R^{311}$, $-SO_2NR^{312}R^{313}$, oxo, NO_2 , cyano, imino, or
17 halogen;

18 R^{33} is H or substituted or unsubstituted alkyl;

19 R^{312} and R^{313} are independently H, substituted or unsubstituted alkyl,
20 substituted or unsubstituted aryl, $-COR^{314}$, or $-SO_2R^{314}$, wherein
21 R^{314} is hydrogen, substituted or unsubstituted alkyl, or substituted or
22 unsubstituted heteroalkyl; and

23 R^{311} is H, substituted or unsubstituted alkyl, or substituted or unsubstituted
24 aryl.

1 37. The compound of claim 1, wherein said compound is:

2 (6-Thiazol-2-yl-pyridin-2-yl)-(5-thiophen-3-yl-pyridin-2-yl)-amine, (3-

3 Methoxy-6-thiazol-2-yl-pyridin-2-yl)-[5-(4-methyl-piperazin-1-yl)-pyridin-2-yl]-amine,

4 (5,6,7,8-Tetrahydro-isoquinolin-3-yl)-(6-thiazol-2-yl-pyridin-2-yl)-amine, (3-Methoxy-6-

5 thiazol-2-yl-pyridin-2-yl)-(3,4,5,6-tetrahydro-2H-[1,3']bipyridinyl-6'-yl)-amine, (3-

6 Methoxy-6-thiazol-2-yl-pyridin-2-yl)-(5-morpholin-4-yl-pyridin-2-yl)-amine, (5-Pyrrolidin-

7 1-ylmethyl-pyridin-2-yl)-(6-thiazol-2-yl-pyridin-2-yl)-amine, 1-{6-[5-Chloro-thiazol-2-
8 yl)-pyridin-2-ylamino]-pyridin-3-yl}-pyrrolidin-2-one, 4-Methyl-1-[6-(6-thiazol-2-yl-
9 pyridin-2-ylamino)-pyridin-3-yl]-piperazin-2-one, [6-(5-Chloro-thiazol-2-yl)-3-methoxy-
10 pyridin-2-yl]-[5-pyrrolidin-1-yl-pyridin-2-yl]-amine, [5-(1,3-Dihydro-isoindol-2-ylmethyl)-
11 pyridin-2-yl]-[6-thiazol-2-yl-pyridin-2-yl)-amine, 1-Methyl-4-[6-(6-thiazol-2-yl-pyridin-2-
12 ylamino)-pyridin-3-yl]-[1,4]diazepan-5-one, (3-Methoxy-6-thiazol-2-yl-pyridin-2-yl)-(5-
13 pyrrolidin-1-yl-pyridin-2-yl)-amine, (5-Phenyl-pyridin-2-yl)-(6-thiazol-2-yl-pyridin-2-yl)-
14 amine, (5-Bromo-pyridin-2-yl)-[6-(4-methyl-pyrazol-1-yl)-pyridin-2-yl]-amine, (5-Chloro-
15 pyridin-2-yl)-(6-pyrazin-2-yl-pyridin-2-yl)-amine, [5-(3-Fluoro-phenyl)-pyridin-2-yl]-[6-(4-
16 methyl-pyrazol-1-yl)-pyridin-2-yl]-amine, 1-[6-(6-Thiazol-2-yl-pyridin-2-ylamino)-pyridin-
17 3-yl]-piperazin-2-one, 1-[6-(3-Methoxy-6-thiazol-2-yl-pyridin-2-ylamino)-pyridin-3-yl]-
18 pyrrolidin-2-one, or [6-(5-Chloro-thiazol-2-yl)-pyridin-2-yl]-[3,4,5,6-tetrahydro-2H-
19 [1,3']bipyridinyl-6'-yl)-amine.